wire 95 by the capillary 93 and pulling the capillary 93 upward in Fig. 40B, the metal wire of, for example, a gold wire (gold line) 95 (note that the examples of the metal wire include those made of zinc, aluminum, copper, or an alloy obtained by incorporating a trace element into these metals, and the gold wire (gold line) will hereinafter be referred to as a representative example in the following embodiments) may be torn off so as to form a bump 3 of a shape as shown in Fig. 40G. A state in which the bump 3 is thus formed on each electrode 2 of the chip 1 is shown in Fig. 38B.

Next, as shown in Fig. 38D, an insulating resin sheet that serves as an example of a solid or semi-solid insulating resin layer of, for example, a thermosetting resin sheet 6, which is cut into a size slightly larger than the size of the chip 1 and mixed with an inorganic filler 6f, is arranged on the electrodes 5 of the circuit board 4 shown in Fig. 38C, and the thermosetting resin sheet 6 is stuck to the electrode 5 of the board 4 placed on a stage 109 with a pressure force of, for example, about 5 to 10 kgf/cm^2 by means of a sticking tool 7 heated to, for example, 80 to 120°C. Subsequently, by peeling off a separator 6a removably arranged on the tool 7 side of the solid or semi-solid thermosetting resin sheet 6 mixed with the inorganic filler 6f, a preparation process of the board

4 is completed. This separator 6a is to prevent the solid or semi-solid thermosetting resin sheet 6 mixed with the inorganic filler 6f from adhering to the tool 7. In this case, as shown in Fig. 38G that is an enlarged view of a portion G of Fig. 38F, the thermosetting resin sheet 6 is preferably provided by mixing an insulating resin 306m with an inorganic filler 6f of ceramics of spherical or pulverized silica, alumina, or the like in dispersion, flattening this by the doctor blade method or the like and vaporizing the solvent component for solidification and preferably have a heat resistance to the extent of tolerating a high temperature in the subsequent reflow process (for example, a heat resistance capable of tolerating a temperature of 240°C for ten seconds). The insulating resin can be provided by, for example, an insulative thermosetting resin (for example, epoxy resin, phenol resin, and polyimide) or an insulative thermoplastic resin (for example, polyphenylene sulfide (PPS), polycarbonate, and modified polyphenylene oxide (PPO)), a mixture of an insulative thermosetting resin with an insulative thermoplastic resin, or the like. In this case, description will be continued with the insulative thermosetting resin taken as a representative example. This thermosetting resin 306m generally has a glass transition point of about 120 to 200°C. When a

thermoplastic resin is only employed, the resin is once softened by heating at the beginning and then hardened by being naturally cooled with the heating stopped. When a mixture of an insulative thermosetting resin with an insulative thermoplastic resin is employed, the resin is hardened by being heated similarly to the case of only the thermosetting resin is employed because the thermosetting resin functions predominantly.

Next, as shown in Fig. 38E and Fig. 38F, in an electronic component mounting apparatus 600 shown in Fig. 55, the chip 1 in which the bumps 3 are formed on the electrodes 2 through the aforementioned process is sucked and held from a tray 602 by a heated bonding tool 8 located at the tip of a component holding member 601, and the IC chip 1 is pressed against the board 4 by the heated bonding tool 8 after being aligned in position with the electrodes 5 of the board 4 corresponding to the electrodes 2 of the IC chip 1, the board 4 having been prepared through the aforementioned preceding process and mounted on a stage 9. This positional alignment is performed by a well-known position recognizing operation. For example, as shown in Fig. 56C, a positional recognition mark(s) 605 or a lead(s) or a land pattern(s) formed on the board 4 is recognized by a board recognizing camera 604 of the electronic component mounting apparatus 600. As shown in Fig. 56D, the position